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Pension Policies and the Aging Society

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Can people in OECD countries afford to grow old? The rapid aging of the population expected in the near future will put enormous pressure on social-insurance, pensions and health-care systems, particularly in the second quarter of the next century. OECD governments should act on several fronts to meet this major challenge, involving both social-insurance and pension systems and economic policies more generally.[1]

There are three different kinds of pension system in operation in the OECD area, each with its own strengths and weaknesses, which contribute to the major uncertainties about their likely performance. It is easiest to define these systems according to how they are financed: pay-as-you-go (PAYG), defined-contribution (DC), and defined-benefit (DB) schemes.

PAYG systems pay retirement benefits out of premia collected on the labour income of the young. These schemes typically imply substantial intergenerational transfers. PAYG systems also generally redistribute resources within generations – the poor contribute less and the rich more than the actuarial value of their pensions. Some highly redistributive PAYG schemes provide flat benefits (but link premia to earnings); others are less redistributive, linking benefits to salaries or premia paid. Many larger OECD countries, including Germany, the United States, France and Italy have less redistributive PAYG systems than some smaller ones.

In contrast to PAYG plans, DC schemes are not redistributive – neither within nor across generations. Individual retirement benefits are directly related to individual contributions. At any point in time, accumulated capital corresponds to the discounted value of future retirement benefits.

DB schemes are a mixture of the other two. Like DC schemes, DB pensions employ capital funding but, in contrast, benefits are based on salaries in the period preceding retirement rather than on the discounted value of individual lifetime contributions. Indeed, besides accumulating capital, the funds levy premia on the younger working members of the scheme to finance the benefits of the older workers and the retired. In this way, they employ a mixture of capital funding and PAYG financing. They are typically provided as occupational schemes by firms.

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Pension Strengths and Weaknesses

All three systems of pension provision have advantages and disadvantages.


The very purpose of public pension systems was to protect the elderly against poverty by guaranteeing them an income.

Thion/Campagne, Campagne

Intergenerational risk

The main potential strength of PAYG and DB schemes is intergenerational risk-sharing in the face of major long-term macro-economic risks, including depression, war, natural disaster and financial crisis. These risks can in part be shifted to the young in the form of changes in the premium rate. This intergenerational risk-sharing, aimed at protecting the incomes of the elderly, can be efficient because the young are generally better able to adapt their behaviour to changes in wealth than are the elderly. In DC schemes, by contrast, the elderly are fully exposed to investment risks.

Political risk

Although PAYG systems are less vulnerable to investment risk than are DC schemes, they are likely to be more vulnerable to political risk, as governments are forced by changing circumstances to reduce actual pension payments below those expected. In particular, the implicit intergenerational 'contract' associated with PAYG schemes may break down as individualisation erodes intergenerational altruism and as aging makes intergenerational 'solidarity' more expensive to maintain. DC schemes are less vulnerable to political risk because they feature well-defined property rights on individual pensions. DB schemes may suffer from political risk, as individual property rights on assets tend to be ill-defined. Such schemes tend to feature implicit rather than explicit contracts, as the benefit promise is backed up not only by financial assets but also by the reputation and market power of the firm and solidarity shown by future workers.

Individual choice and administrative costs

PAYG, and to a lesser extent DB, schemes require compulsory participation under rather uniform conditions. If individuals were free to opt out or select their own pension packages, adverse selection – voting with one's feet – would erode intra- and intergenerational risk-sharing and redistribution. DC schemes leave more scope for individual choice and can cater better to the specific requirements and preferences of each participant. The disadvantage is that the contributions and assets accruing to each individual must be separately administered, leading to high transaction costs.

Insurance, alleviating poverty and incentives

The transfers associated with intergenerational risk-sharing imply that PAYG benefits are not actuarially fair. Policy-makers face a trade-off between efficiency (by redistributing less and keeping marginal tax-rates low) and intragenerational equity (by redistributing more and alleviating poverty among the elderly).

The extent of the conflict between the two objectives depends on income heterogeneity within generations compared with heterogeneity across them. These objectives do not conflict much if the old are a homogeneous group that is poorer than the young. Yet if incomes vary within (rather than across) generations, age is not a good indicator for poverty. As a result, the government has to supplement its information about individuals' age with information about their incomes to determine who is poor. That imposes additional administrative costs, may cause limited take-up because of stigmatising effects, and distorts saving and the supply of labour.[2] Alleviating poverty thus becomes more expensive.

Voluntary DC schemes distort neither saving nor the supply of labour because they do not redistribute across and within generations. DC schemes are particularly attractive if society does not attach a high priority to (intra- and intergenerational) redistribution and risk-sharing.

Employers often adopt occupational schemes of the DB type. Long vesting periods (the amount of time which a worker has to spend with a company before being entitled to a (full) pension), limited indexation of pension rights for people who stop their payments before they retire, and linking retirement benefits to the final wage motivate workers to apply themselves to their jobs, and binds them to the firm. This reduces costs associated with monitoring, training, hiring and firing workers.

These incentive effects come at a price. In particular, limited portability of pension rights impedes labour mobility across firms, thus rendering its allocation less efficient, and may discourage gradual retirement. DB schemes tend to favour the rich (who tend to have stable jobs and enjoy rapid career advancement) rather than the poor (who tend to have high rates of job turn-over).

Demographic shocks and funding pensions

The long-run return to PAYG schemes depends on the growth rate of labour income, which in turn determines the growth of the contribution base. The return on funded schemes, in contrast, depends on the rate of return on financial assets. In the long run, therefore, funding can offer higher retirement benefits only if the rate of return on financial capital exceeds the growth rate of labour income (that is, the sum of the growth rate of labour productivity and the growth rate of employment). During the 1970s and '80s, the return on equities substantially exceeded the growth rate of labour income.[3]

Aging of the population reduces the attractiveness of PAYG by decreasing the growth rate of employment. But it is also likely to make labour scarce relative to physical capital, thus raising its price and wage growth and depressing the rate of return on capital. Accordingly, the general effect of aging on whether PAYG schemes are more or less attractive than funded schemes is ambiguous.

*1. **Beyond 2000: The New Social Policy Agenda**, OECD Publications, Paris, forthcoming 1997.*

2. The increase in tax or contributions to pension systems as earnings rise is less than the increase in future pensions. The return to increasing earnings is thus reduced, so distorting the supply of labour.

3. H. J. Aaron, 'The Social Insurance Paradox', Canadian Journal of Economics and Political Science, *Vol. 32, 1996.*

Pension Policies and the Aging Society

Choice of pension scheme should depend on the objectives which public policy is trying to pursue. Old-age poverty is best alleviated by a nationwide public PAYG system that provides a minimum standard of living in old age. This welfare system would be mandatory, redistributive, and can be financed from current tax revenues. Those high-income workers who want to go beyond the mandatory amount of pension insurance can use supplementary private pension plans, which will tend to be of the DC type. These schemes will be particularly important in heterogeneous societies with diverse requirements.

Many OECD countries, including Germany, France and Italy, have integrated both alleviation of old-age poverty and income insurance into a single, comprehensive public pension system. In other OECD countries, including Denmark, the Netherlands, New Zealand and Switzerland, the insurance function is performed by private funded schemes.

Insuring Against Population Aging

Demographic trends can be foreseen with some degree of accuracy, even over the long term. But there is considerable uncertainty about the non-demographic trends (such as employment, wage growth, the return on capital, family formation and dissolution) that will affect systems of old-age insurance.[4] To spread these risks, policy-makers in OECD countries should take action on several fronts. The use of several policy instruments is attractive not only from the point of view of risk-sharing but also for political reasons: costs and benefits are spread over various groups. A package of measures may facilitate the building of consensus about reform (box, below).

Some policies are part of 'no regret' strategies because they work out well in all scenarios.

Higher effective retirement age

The most robust policy recommendation is that the effective retirement age should rise with life expectancy. A higher retirement age reduces the necessity not only for fiscal transfers but also for intertemporal transfers in the form of financial savings. Gradual retirement is consistent with a more uniform distribution of education, work and leisure over the life-cycle.

Broad-based tax system

Since older people now lead longer, healthier lives than when PAYG systems where established, they are in a position to be net contributors to national budgets for a longer time. Broadening the tax base by reducing tax privileges to the elderly and by making the tax treatment of their capital income more neutral would have this effect. Indeed, as the elderly population grows more heterogeneous, the net contribution to the budget should be based less on age and more on income. Old-age poverty relief could be financed through broad-based taxes paid by the entire population rather than through narrow-based taxes that hit only the wages of the workforce.

More efficient markets

Removing rigidities in capital and labour markets can increase the viability of pension systems. For example, by allowing older people to work part-time, they can induce them to delay retirement so that their human capital is not lost. Efficient markets can contribute to a higher participation rate of both older and younger people, thereby mitigating the decline in the

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Policies to Counter Population Aging

Investing in People

Human capital in general

Alleviating moral hazard in social security

- *tighten requirements for disability and unemployment*
- *enhance efficiency of social-security administration*
- *reduce social security-benefits*
- *reduce marginal tax wedge on labour income*
- *strengthen link between contributions and benefits by reforming PAYG and DB pension schemes or by moving to multi-pillar systems with a larger role for DC schemes*
- *reduce perverse redistribution in pension schemes*
- *shift tax burden to those outside the labour force (by shifting to consumption taxes, for example)*
- *maintain cash-flow income-tax treatment of pension saving*
- *broaden the tax base by reducing tax privileges for the more affluent elderly*
- *mitigate tax arbitrage through a more neutral system of capital-income taxation*

Improving the labour market for older people

Raising effective retirement age

- *make pensions more actuarially fair*
- *encourage life-long learning*
- *reconsider age-related pay schemes and final-pay pension schemes*
- *deregulate labour markets and sheltered sectors*
- *alleviate moral hazard in social security*

Improving the labour market for young people

Raising participation rate of women

- *enhance child care*
- *reduce disincentives to work originating in the tax system*

Investing in Physical Capital

Public saving

- *cut budget deficit*

Private saving

- *provide tax incentives*
- *(gradually) reduce the relative importance of PAYG benefits*
- *make pension saving compulsory*
- *issue indexed government bonds*

Investment inside the OECD

- *develop stock markets*
- *improve corporate governance*
- *enhance competition*
- *pursue stable macro-economic policies*

Investment outside the OECD

- *enhance efficiency of financial sectors in non-OECD countries*
- *improve accounting standards*
- *promote trade liberalisation*
- *relax regulatory constraints on foreign investments in the OECD area*

worker/retiree ratio on account of aging. Indeed, clear market signals become more important so that people can more flexibly allocate their time and other resources over various activities. Efficient international markets for capital, commodities, and services allow countries with different demographic developments to exploit their specific comparative advantages.

Social-insurance reform

Reform of the social-insurance system is essential to improve the efficiency of the labour market.[5] The effective retirement age has been falling over the past few decades, in part because of the increasing use of invalidity and early-retirement schemes. Tightening the requirements for benefits and promoting a lengthened working life will increase the period over which individuals are contributing to pensions and reduce the period over which they will be claiming them. Thus the trade-off between equity and efficiency will be improved. Moreover, in addition to lower marginal tax rates, reduced insurance coverage also may contribute to more efficient retirement and other labour-market decisions.

Spreading and pooling risks

To diversify risks, the elderly may want to draw on a mix of assets. In particular, they can rely on the human capital of younger workers, not only through the intergenerational contracts implicit in PAYG and DB schemes but also through explicit financial claims in DB and DC schemes. In addition, they may want to spread risk to foreign economies by investing their part of pension saving abroad. Finally, they have the option of deferring retirement, or continuing to work (perhaps only part-time) after they reach the statutory retirement age.

Table
Strengths and Weaknesses of Three Pension Systems

	Pay-As-You-Go			
	Flat Benefits	*Benefits Based on Contributions or Salary*	*Defined Benefit*	*Defined Contribution*
Insurance against:				
intergenerational inequities	+	+	+	–
demographic shocks	–	–	0	+
low return on human capital	–	–	+	+
low return on financial capital	+	+	0	–
political risks	–	–	0	+
Strong incentives to:				
save	–	–	0	+
work	–	0	0	+
invest in human capital	–	0	+	0
Efficient allocation of labour (portability of claims)	+	+	–	+
Poverty alleviation	+	–	–	0
Low administrative costs	+	+	+	0
Individual choice of participation and pension level	–	–	–	+

Private pension provision

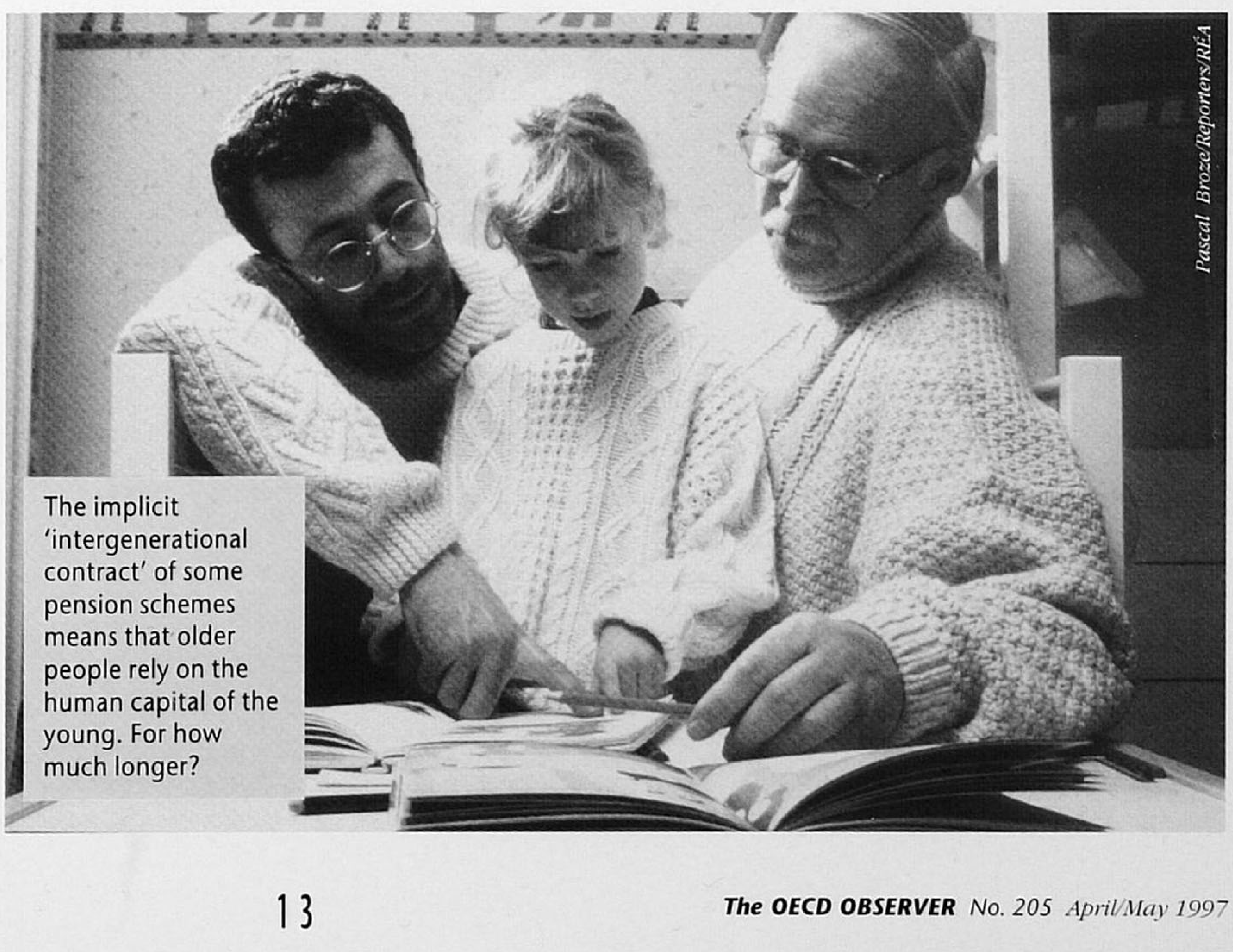
Another way of alleviating the burden of the elderly on the budget is to stimulate private pension provision. Indeed, countries that currently rely heavily on public PAYG systems, may reduce the benefits these systems offer to higher incomes, thus stimulating private, funded pension plans. Governments could stimulate DC systems by providing inflation-indexed bonds and by fostering intergenerational risk-sharing through the tax system.

Choices and Trade-offs

Some policy responses seem to offer satisfactory solutions in view of the principal demographic and labour-market trends currently foreseen. Others are more appropriate in specific sets of circumstances, which means that countries will face substantial trade-offs if they adopt them.

The volume of saving

The first such trade-off involves the volume of saving. A problem that arises in moving from public PAYG to private funded schemes is that, without an increase in the budget deficit, a rapid transition requires a substantial increase in



Pascal Broze/Reporters/REA

The implicit 'intergenerational contract' of some pension schemes means that older people rely on the human capital of the young. For how much longer?

4. *Beyond 2000: The New Social Policy Agenda.*
5. See pp. 6–9.

As the elderly population grows more heterogeneous, the net contribution to the budget should be based less on age and more on income.

national saving. That may put a high burden on current generations and cause a short-term decline in employment because of high labour costs and lower labour supply, both effects being caused by increases in taxation (the bulk of which will inevitably be borne by labour). A trade-off between saving and employment thus emerges. Tax incentives to encourage savings for private pensions may reduce the burden on current generations. But these incentives tend to reduce government tax revenues and hence public saving; as a result, the national saving rage may not increase. In addition, tax arbitrage may follow as people shift assets into low-tax savings instruments.

The composition of saving

Saving can occur in not only financial assets but also human capital. Investing in the human capital of older people allows them to remain in the work force for longer, thereby reducing the call for fiscal transfers. Investing in the human capital of younger people (through, for example, public education or training) raises wages, thereby broadening the tax base and allowing higher PAYG benefits. But, unlike human-capital investments in older people, investments in human capital of the young do still require fiscal transfers. Moreover, relying on the human capital of the young (and the implicit intergenerational contract) may impose substantial political risks on the elderly: younger voters may simply repudiate the 'contract'. To mitigate these risks, the elderly can invest in young workers also by investing their financial assets in their own country. In this way, they acquire an explicit rather than implicit claim on younger workers employed in domestic firms.

■ ■

Growing old raises the expected return on human capital by providing the opportunity to deploy it over a longer period. Moreover, by leading longer, healthy lives, older people are in a position to contribute more to society in general and to national budgets in particular. Finally, aging allows OECD countries to exploit the comparative advantages that come with age (such as the acquisition of experience and financial assets) by trading with younger societies.

But aging does require countries to adapt their economies. Since the effects are rather predictable, countries have still time to act. Gradually phasing in policy measures at an early stage avoids abrupt and painful policy corrections that cannot be avoided later on. ■

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